Install drivers

Windows

Install programs

Natural Color

MagicTune™

SyncMaster 940BW/941BW/920BW

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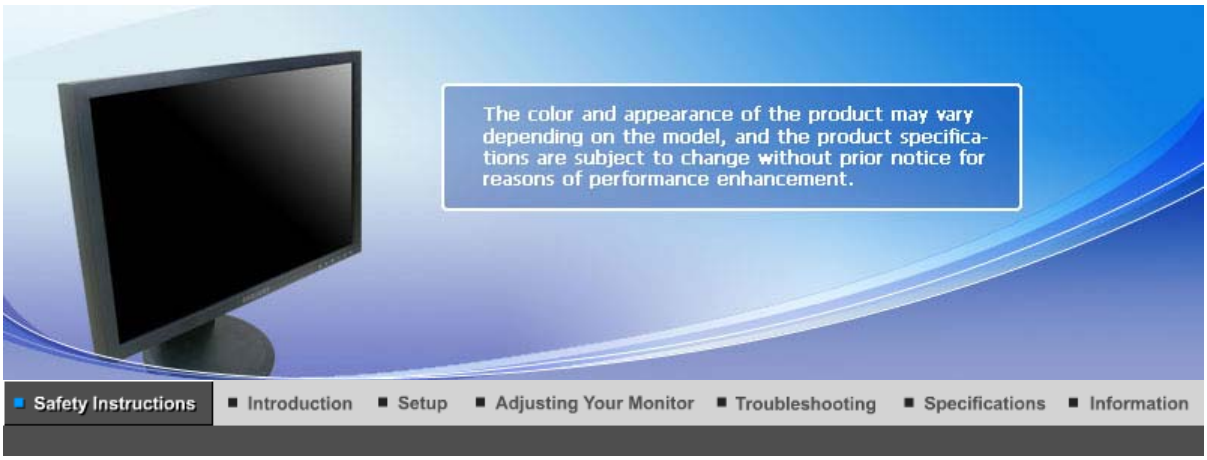
The color and appearance of the product may vary depending on the model, and the product specifications are subject to change without prior notice for reasons of performance enhancement.
Safety Instructions
Introduction
Setup
Adjusting Your Monitor
Troubleshooting
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Notational

Please read the following safety instructions as they are designed to prevent damage to property and harm to the user.

Warning / Caution

Failure to follow directions noted by this symbol could result in bodily harm or damage to the equipment.

Notational Conventions

Prohibited

Important to read and understand at all times

Do not disassemble

Disconnect the plug from the outlet

Do not touch

Ground to prevent an electric shock

Power

When not used for an extended period of time, set your computer to DPMS.
If using a screen saver, set it to active screen mode.

The images here are for reference only, and are not applicable in all cases (or countries).

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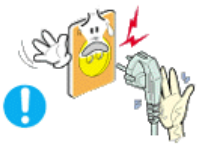
Shortcut to Anti-Afterimage Instructions

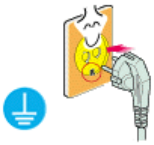
Do not use a damaged or loose plug.

- This may cause electric shock or fire.



Do not pull the plug out by the wire nor touch the plug with wet hands.

- This may cause electric shock or fire.

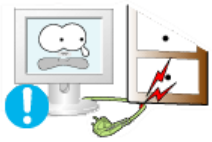


Use only a properly grounded plug and receptacle.

- An improper ground may cause electric shock or equipment damage.

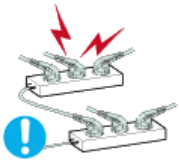
Insert the power plug firmly so that it does not come loose.

- A bad connection may cause fire.



Do not excessively bend the plug and wire nor place heavy objects upon them, which could cause damage.

- This may cause electric shock or fire.



Do not connect too many extension cords or plugs to one outlet.

- This may cause fire.

Do not disconnect the power cord while using the monitor.

- A surge may be caused by the separation and may damage the monitor.

Do not use the power cord when the connector or plug is dusty.

- If the connector or plug of the power cord is dusty, clean it with a dry cloth.
- Using the power cord with a dusty plug or connector may cause electric shock or fire.

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Installation

Be sure to contact an authorized Service Center, when installing your monitor in a location with heavy dust, high or low temperatures, high humidity, and exposed to chemical substances and where it operates for 24 hours such as at airports, train stations etc.

Failure to do so may cause serious damage to your monitor.

Place your monitor in a location with low humidity and a minimum of dust.

- Failure to do so may cause electric shock or fire inside the monitor.

Do not drop the monitor when moving it.

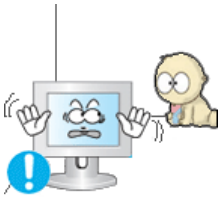
- This may cause damage to the product or the person carrying it.

Install the monitor base in a showcase or shelf so that the end of the base does not protrude from the showcase or shelf.

- Dropping the product may cause damage to the product or the person carrying it.

Do not place the product on an unstable or small surface area.

- Place the product on an even and stable surface, as the product may fall and cause harm to someone walking by, specifically children.



Do not place the product on the floor.

- Take care, as someone, specifically children may trip over it.

Keep any flammable objects such as candles, insecticides or cigarettes away from the product.

- Otherwise, this may cause fire.A melted coating may cause electric shock or fire.

Keep any heating devices away from the power cable.

- A melted coating may lead to electric shock or fire.

Do not install the product in places with poor ventilation, for instance, a bookshelf, closet, etc.

- Any increase in the internal temperature may cause fire.

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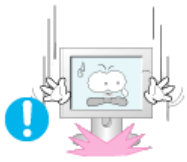

Put down the monitor carefully.

- Failing to do so may damage the monitor.

Do not place the monitor face down.

- This may damage the TFT-LCD surface.The installation of the bracket must be done by a qualified professional.

Installing a wall bracket must be done by a qualified professional.

- Installing the bracket by unqualified personnel may result in injury.
- Always use the mounting device specified in the owner's manual.

When installing the product, make sure to keep it away from the wall (more than 10 cm/4 inches) for ventilation purposes.

- Poor ventilation may cause an increase in the internal temperature of the product, resulting in a shortened component life and degraded performance.

Keep the plastic packaging (bag) out of children's reach.

- The plastic packaging (bag) may cause suffocation if children play with it.

Clean

When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.

Do not spray water or detergent directly onto the monitor.

- This may cause damage, electric shock or fire.

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- **Use the recommended detergent with a smooth cloth.**

- **If the connector between the plug and the pin is dusty or dirty, clean it properly using a dry cloth.**
  - A dirty connector may cause electric shock or fire.

- **Make sure to unplug the power cord before cleaning the product.**
  - Otherwise, this may cause electric shock or fire.

- **Unplug the power cord from the power outlet and wipe the product using a soft, dry cloth.**
  - Do not use any chemicals such as wax, benzene, alcohol, thinners, insecticide, air freshener, lubricant or detergent.

- **Contact the SAMSUNG customer care center or Customer Center for interior cleaning once a year.**
  - Keep the product's interior clean. Dust which has accumulated in the interior over an extended period of time may cause a malfunction or fire.

Others

- **Do not remove the cover (or back).**
  - This may cause electric shock or fire.
  - Refer to a qualified servicing company.

- **If your monitor does not operate normally - in particular, if there is any unusual sound or smell coming from the monitor - unplug it immediately and contact an authorized dealer or the Service Center.**
  - This may cause electric shock or fire.

- **Keep the product away from places exposed to oil, smoke or moisture; do not install inside a vehicle.**
  - This may cause a malfunction, electric shock or fire.

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- In particular, avoid operating the monitor near water or outdoors where the monitor could be exposed to snow or rain.

If the monitor is dropped or the casing is damaged, turn the monitor off and unplug the power cord. Then contact the Service Center .

- The monitor may malfunction, causing electric shock or fire.

Disconnect the plug from the outlet during storms or lightning or if it is not used for a long period of time.

- Failure to do so may cause electric shock or fire.

Do not try to move the monitor by pulling only the wire or the signal cable.

- This may cause a breakdown, electric shock or fire due to damage to the cable.

Do not move the monitor right or left by pulling only the wire or the signal cable.

- This may cause a breakdown, electric shock or fire due to damage to the cable.

Do not cover the vents on the monitor cabinet.

- Bad ventilation may cause a breakdown or fire.

Do not place water containers, chemical products or small metal objects on the monitor.

- This may cause a malfunction, electric shock or fire.
- If a foreign substance enters the monitor, unplug the power cord and contact the Service Center.

Keep the product away from combustible chemical sprays or inflammable substances.

- This may cause an explosion or fire.

Never insert anything metallic into the monitor openings.

- This may cause electric shock, fire or injury.

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- **Do not insert metal objects such as chopsticks, wire and tools or inflammable objects such as paper or matches into the vent, headphone port or AV ports or etc.**
  - This may cause electric shock or fire. If an alien substances or water enters the product, turn the product off, unplug the power connector from the wall outlet and contact the Service Center.

- **When viewing a fixed screen for an extended period of time, residual image or blurriness may appear.**
  - Change the mode to energy saving mode or set a screensaver to a changing picture when away from the monitor for an extended period of time.

- **Adjust the resolution and frequency to the level appropriate for the model.**
  - An inappropriate resolution may cause undesirable picture quality.

    19 inch Wide (48 cm) - 1440 X 900

- **Viewing the monitor continuously at a too close angle may result in damage to your eyesight.**

- **To ease eye strain, take at least a five-minute break after every hour of using the monitor**.

- **Do not install the product on an unstable, uneven surface or a location prone to vibrations.**
  - Dropping the product may cause damage to the product or the person carrying it. Using the product in a location prone to vibrations may shorten the lifetime of the product or may cause the product to catch fire.

- **When moving the monitor, turn off and unplug the power cord. Make sure that all cables, including the antenna cable and cables connected to other devices, are disconnected before moving the monitor.**
  - Failure to disconnect cables may damage it and cause fire or electric shock.

- **Place the product out of children's reach, as they could damage by hanging onto it.**
  - A falling product may cause injury to the person or even fatality.

- **When not using the product for an extended period of time, keep the product unplugged.**

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- Otherwise, this may cause heat emission from the accumulated dirt or degraded insulation, causing electric shock or fire.

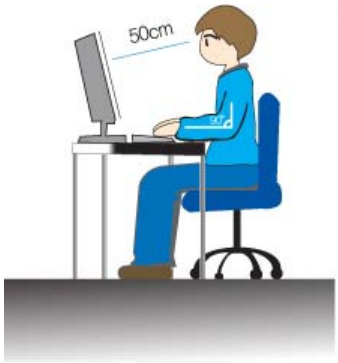
Do not place your children's favorite toys or any other objects of interest on the product.

- Children may try to climb on the product to retrieve an object. The product could fall, causing injury or even fatality.

When lifting up or moving the monitor, do not lift the monitor upside down while holding only the stand.

- This may cause your monitor to fall, and become damaged or cause personal injury.

Good Postures When Using the Monitor



Try to maintain a good posture when using the monitor.

- Keep your back straight.
- Keep a distance of about 45 ~ 50 cm between your eyes and the monitor screen. Look at the screen from slightly above it, and have the monitor directly in front of you.
- Tilt the monitor upwards by 10 ~20 degrees. Adjust the monitor height so that the top of the monitor is slightly below eye level.
- Adjust the monitor angle so that there is no reflected light on the screen.Try to maintain your arms perpendicular to your armpits.
- Keep your arms level with the back of your hands.
- Keep the angle of the elbow perpendicular.
- Keep the angle of the knees at more than 90 degree. Do not let your feet fall up from the floor. Adjust the arm position so that it is below the heart.

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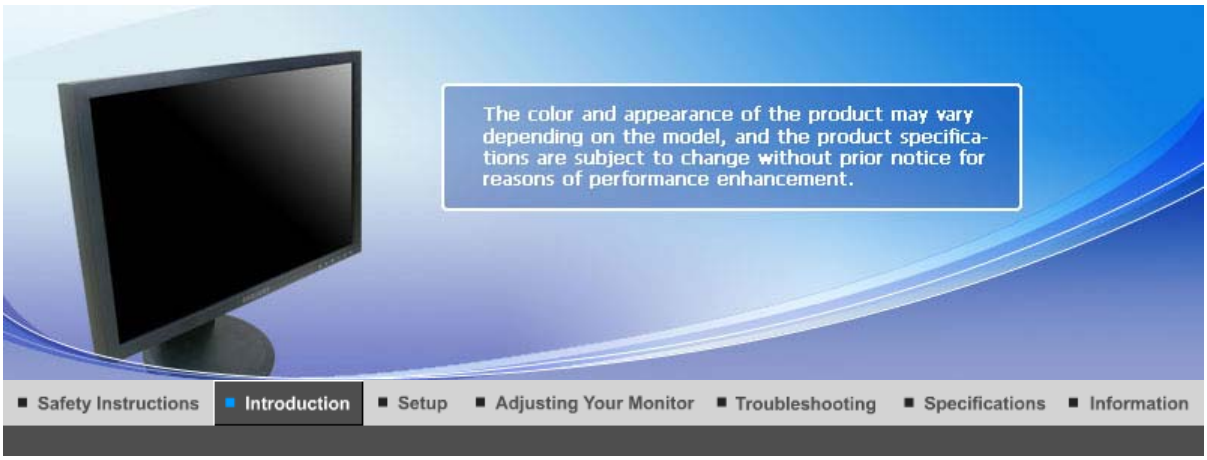
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Features

RTA Monitor

RTA(Response Time Accelerator)
A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display.

- **RTA On** Activates the RTA function so that the panel operates at a higher response speed than its original speed.
- **RTA Off** Deactivates the RTA function so that the panel operates at its original response speed.

(**Note** : If you turn the power off and on again after switching RTA off, the RTA function is automatically switched On (Factory Setting)

Please make sure the following items are included with your monitor.
If any items are missing, contact your dealer.
Contact a local dealer to buy optional items.

Unpacking

Type 1

Monitor

Bottom

Type 2

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Monitor & Sliding Stand

- **Manual**

Quick Setup Guide

Warranty Card
(Not available in all locations)

User's Guide, Monitor Driver, Natural Color software, MagicTune™ software

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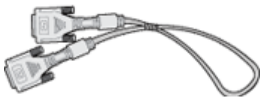
- **Cable**

D-sub Cable

Power Cord



DVI Cable (option)

- **Front**

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1	**MENU button [▥]**	Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2	**MagicBright™ [◢◣]**	MagicBright™ is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently six different modes are available: Custom, Text, Internet, Game, Sport and Movie. Each mode has its own pre-configured brightness value. You can easily select one of six settings by simply pressing MagicBright™ control button. **1) Custom** Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the brightness and contrast by using the OSD menu. **2) Text** For documentations or works involving heavy text. **3) Internet** For working with a mixture of images such as text and graphics. **4) Game** For watching motion pictures such as a game. **5) Sport** For watching motion pictures such as a sport. **6) Movie** For watching motion pictures such as a DVD or Video CD. >>Click here to see an animation clip
3	**Brightness button [☼]**	When OSD is not on the screen, push the button to adjust brightness.
2,3	**Adjust buttons [▼/▲]**	Adjust items in the menu.
4	**Enter button [⏎] / Source button**	Activates a highlighted menu item. / Push the '⏎', then selects the video signal while the OSD is off. (When the '⏎' button is pressed to change the input mode, a message appears in the upper left of the screen displaying the current mode -- analog or digital input signal.) Note : If you select the digital mode, you must connect your monitor

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		to the graphic card's DVI port or DVD player's DVI Port using the DVI cable or DVD player's HDMI port using the DVI to HDMI cable.
5	**AUTO button**	Use this button for auto adjustment.
6	**Power button [⏻]/ Power indicator**	Use this button for turn the monitor on and off. / This light glows blue during normal operation, and blinks blue once as the monitor saves your adjustments.

See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods.

Rear

Simple stand **Sliding Stand**

(The configuration at the back of the monitor may vary from product to product.)

1	**POWER port**	Connect the power cord for your monitor to the power port on the back of the monitor.
2	**DVI IN port**	Connect the DVI Cable to the DVI port on the back of your monitor.
3	**RGB IN port**	Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.
4	**Kensington Lock**	The Kensington lock is a device used to physically fix the system when using it in a public place. (The locking device has to be purchased separately.) **For using a locking device, contact where you purchase it.**
5	**ON [|] / OFF [O]**	Switch the monitor on and off.

See Connecting the Monitor for further information regarding cable connections.

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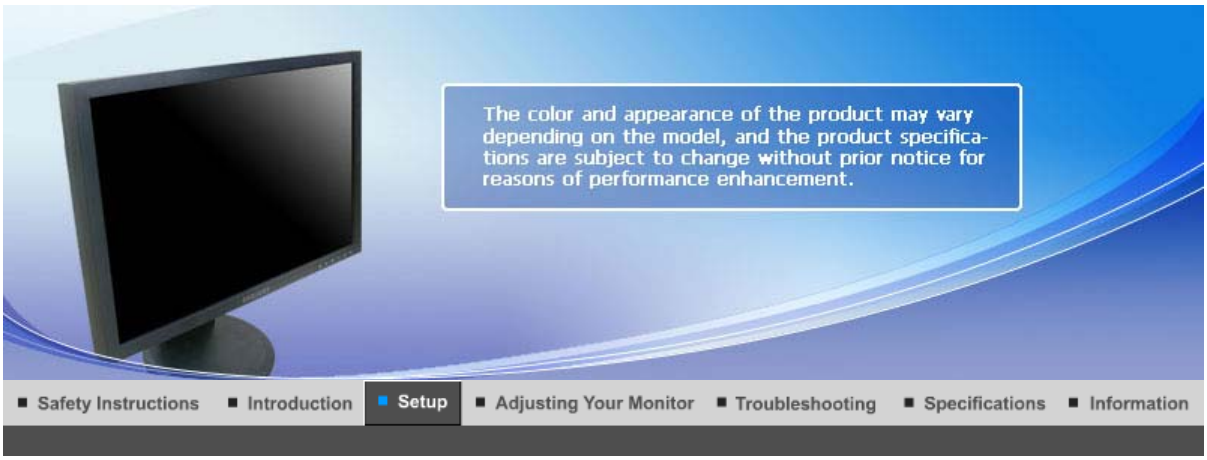
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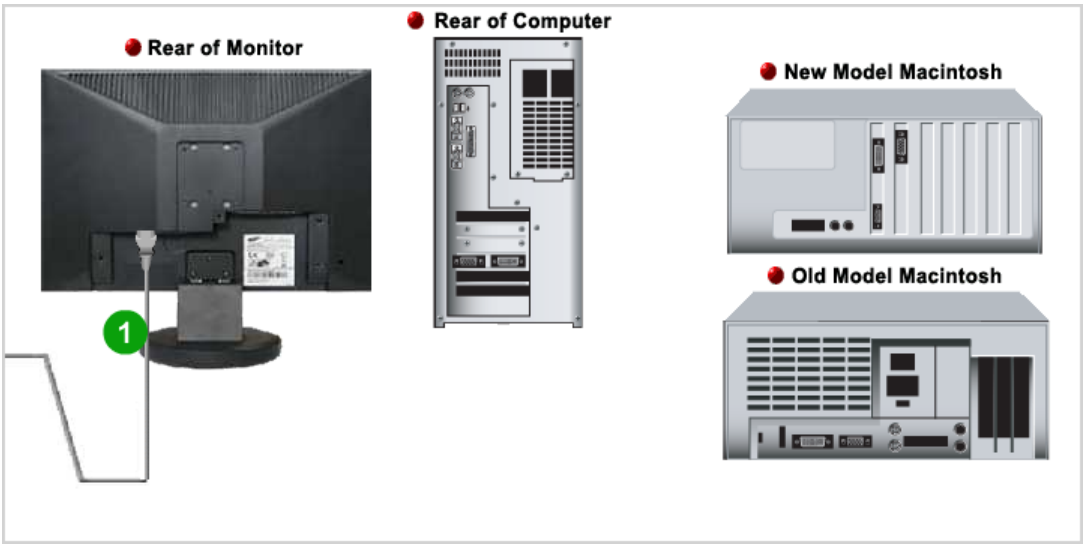
Connecting the Monitor



1. Connect the power cord for your monitor to the power port on the back of the monitor.
Plug the power cord for the monitor into a nearby outlet.

2-1. Using the D-sub (Analog) connector on the video card.
Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.

[RGB IN]

2-2. Using the DVI (Digital) connector on the video card.
Connect the DVI Cable to the DVI Port on the back of your Monitor.

[DVI IN]

2-3. Connected to a Macintosh.
Connect the monitor to the Macintosh computer using the D-sub connection cable.

2-4. In the case of an old model Macintosh, you need to connect the monitor using a special Mac adapter (Option).

3. Turn on your computer and monitor. If your monitor displays an image, installation is complete.

Connecting Digital DVD

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1. DVI cable

1. Input devices such as digital DVD are connected to the **DVI IN** terminal of the monitor using the DVI cable.
2. Then, start the DVD with a DVD disc inserted.
3. Select **Digital** using the **SOURCE** button.

2. DVI-HDMI cable

1. The HDMI terminal of digital DVD player is connected to the **DVI IN** terminal of the monitor using the HDMI-DVI cable.
2. Then, start the DVD with a DVD disc inserted.
3. Select **Digital** using the **SOURCE** button.

Using the Stand

Monitor Assembly

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Monitor and Bottom

- **Sliding Stand**

A. Stand Stopper

- **Attaching a Base**

This monitor accepts a 75 mm x 75 mm VESA-compliant mounting interface pad.

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Simple stand

Sliding Stand

A. Monitor

B. Mounting interface pad (Sold separately)

1. Turn off your monitor and unplug its power cord.
2. Lay the LCD monitor face-down on a flat surface with a cushion beneath it to protect the screen.
3. Remove four screws and then remove the stand from the LCD monitor.
4. Align the mounting interface pad with the holes in the rear cover mounting Pad and secure it with four screws that came with the arm-type base, wall mount hanger or other base.

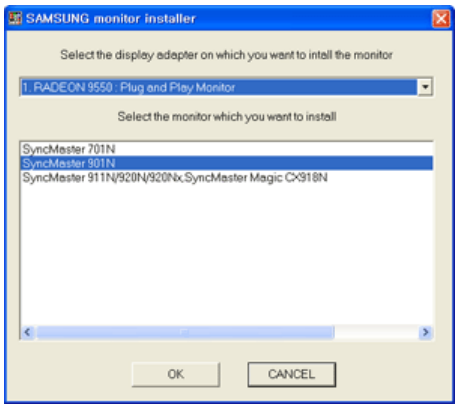
Installing the Monitor Driver (Automatic)

When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

Prepare a blank disk and download the driver program file at the Internet web site shown here.

- Internet web site : http://www.samsung.com/ (Worldwide)
  http://www.samsung.com/monitor (U.S.A)
  http://www.sec.co.kr/monitor (Korea)
  http://www.samsungmonitor.com.cn/ (China)

1. Insert CD into the CD-ROM drive.
2. Click **"Windows"**
3. Choose your monitor model in the model list, then click the **"OK"** button.


SAMSUNG monitor installer
Select the display adapter on which you want to intall the monitor
1. RADEON 9550 : Plug and Play Monitor
Select the monitor which you want to install
SyncMaster 701N
SyncMaster 901N
SyncMaster 911N/920N/920Nx,SyncMaster Magic CX918N
OK
CANCEL

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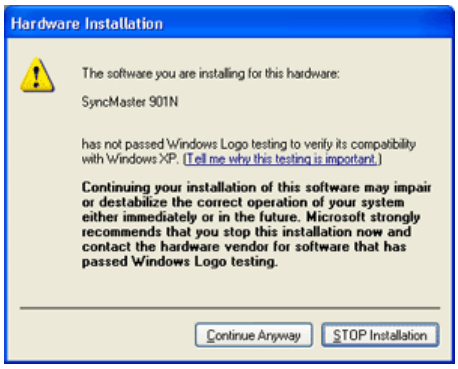
4. If you can see following message window, then click the **"Continue Anyway"** button. Then click **"OK"** button. (Microsoft® Windows® XP/2000 Operating System)


Hardware Installation
The software you are installing for this hardware:
SyncMaster 901N
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

This monitor driver is under certifying MS logo,and this installation don't damage your system.The certified driver will be posted on Samsung Monitor homepage
http://www.samsung.com/.

5. Monitor driver installation is completed.

Installing the Monitor Driver (Manual)

Windows XP | Windows 2000 |Windows Me |Windows NT | Linux

When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

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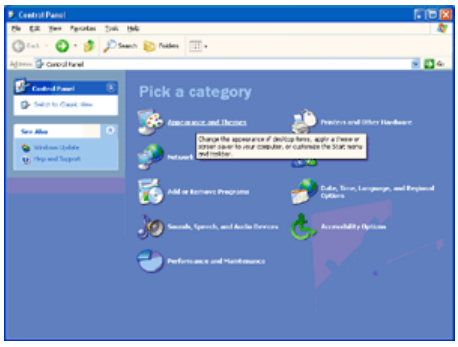
  http://www.samsung.com/monitor (U.S.A)
  http://www.sec.co.kr/monitor (Korea)
  http://www.samsungmonitor.com.cn/ (China)

Microsoft® Windows® XP Operating System

1. Insert CD into the CD-ROM driver.
2. Click "**Start**" —> "**Control Panel**" then click the "**Appearance and Themes**" Icon.



3. Click "**Display**" icon and choose the "**Settings**" tab then click "**Advanced..**".

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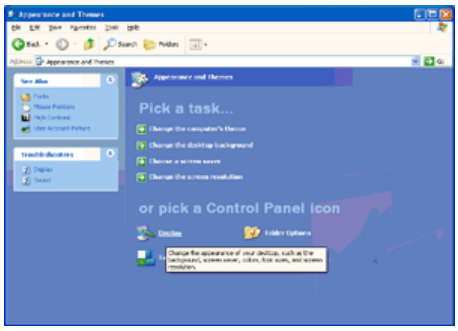
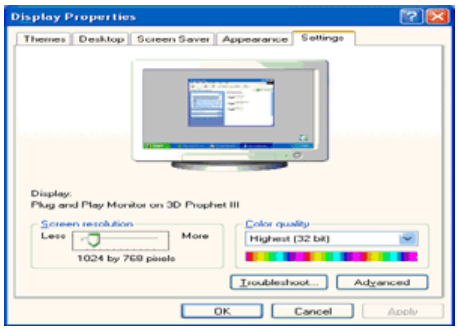
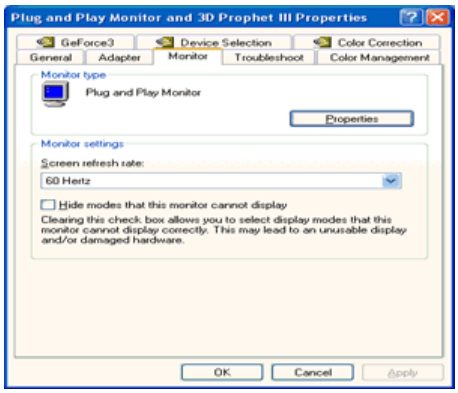
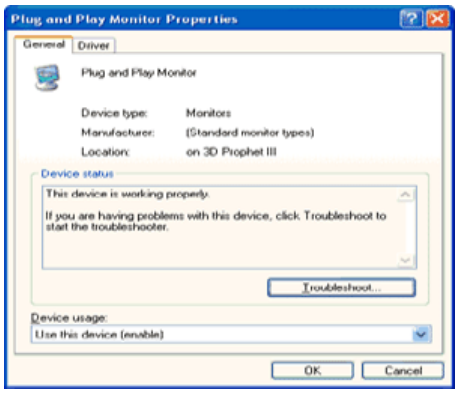


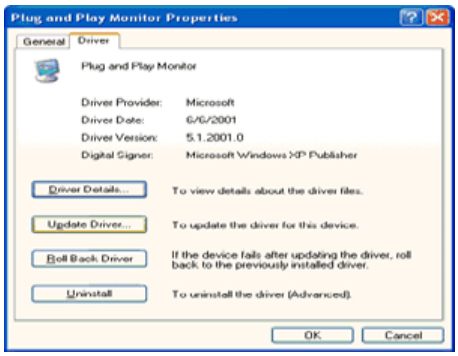


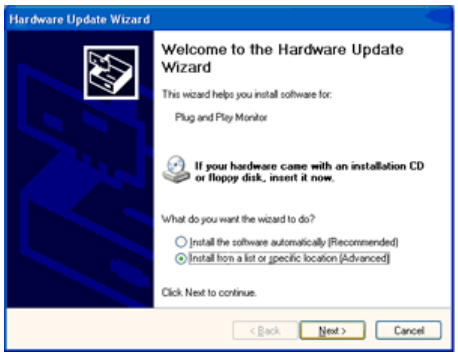
4. Click the "**Properties**" button on the "**Monitor**" tab and select "**Driver**" tab.



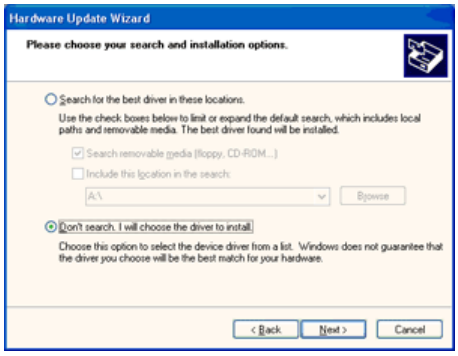
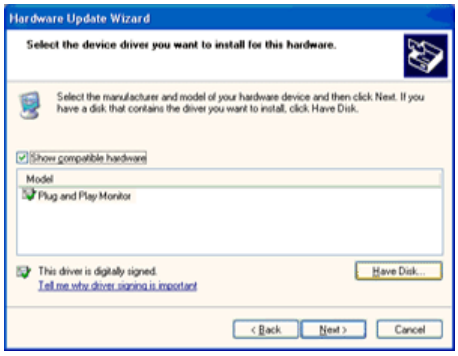


5. Click "**Update Driver..**" and select "**Install from a list or..**" then click "**Next**" button.




Hardware Update Wizard
Welcome to the Hardware Update Wizard
This wizard helps you install software for:
Plug and Play Monitor
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

6. Select "**Don't search ,I will..**" then click "**Next**" and then click "**Have disk**".


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
A:\
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
Plug and Play Monitor
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

7. Click the "**Browse**" button then choose A:(D:\Driver) and choose your monitor model in the model list and click the "**Next**" button.

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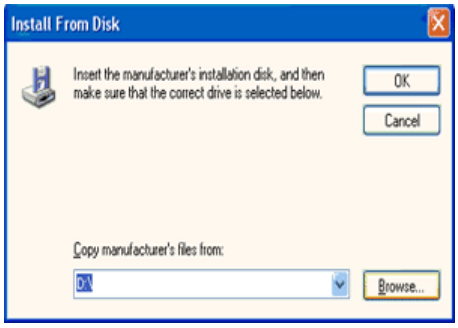
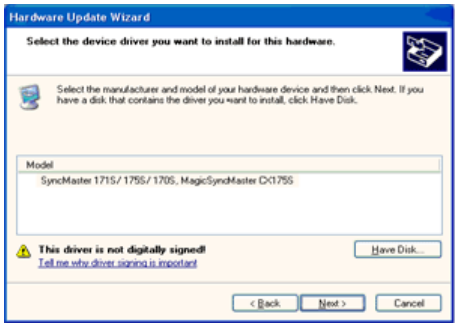
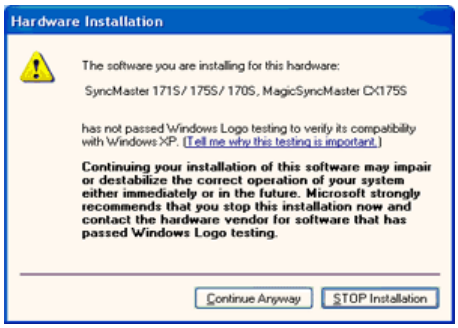

Install From Disk
Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.
OK
Cancel
Copy manufacturer's files from:
Browse...

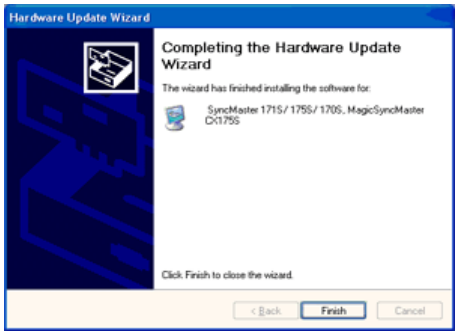

Hardware Update Wizard
Select the device driver you want to install for this hardware.
Model
This driver is not digitally signed!
Have Disk...
< Back
Next >
Cancel

8. If you can see following "**Message**" window, then click the "**Continue Anyway**" button. Then click "**OK**" button.

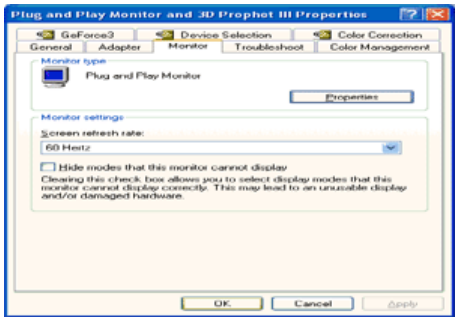

Hardware Installation
The software you are installing for this hardware:
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

This monitor driver is under certified MS logo,and this installation doesn't damage your system.The certified driver will be posted on Samsung Monitor homepage.
http://www.samsung.com/

9. Click the "**Close**" button then click "**OK**" button continually.


Hardware Update Wizard
Completing the Hardware Update Wizard
The wizard has finished installing the software for:
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
Click Finish to close the wizard.
< Back
Finish
Cancel

SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX...
General
Driver
SyncMaster 171S/ 175S/ 170S, MagicSyncMaster CX175S
Driver Provider: Samsung
Driver Date: 9/11/2001
Driver Version: 1.0.0.0
Digital Signer: Not digitally signed
Driver Details...
To view details about the driver files.
Update Driver...
To update the driver for this device.
Roll Back Driver
If the device fails after updating the driver, roll back to the previously installed driver.
Uninstall
To uninstall the driver (Advanced).
Close
Cancel



10. Monitor driver installation is completed.

Microsoft® Windows® 2000 Operating System

When you can see "Digital Signature Not Found" on your monitor, follow these steps.

1. Choose "**OK**" button on the "**Insert disk**" window.
2. Click the "**Browse**" button on the "**File Needed**" window.
3. Choose A:(D:\Driver) then click the "Open" button and then click "**OK**" button.

How to install

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1. Click "**Start**" , "**Setting**" , "**Control Panel**".
2. Double click the "**Display**" Icon.
3. Choose the "**Settings**" tab and then click "**Advanced..**".
4. Choose "**Monitor**".
   Case1: If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation
   Case2: If the "Properties" button is active, click the "Properties" button then follow next steps continually.
5. Click "**Driver**" and then click on "**Update Driver..**" then click on the "Next" button.
6. Choose "**Display a list of the known drivers for this device so that I can choose a specific driver**" then click "**Next**" and then click "**Have disk**".
7. Click the "**Browse**" button then choose A:(D:\Driver).
8. Click the "**Open**" button, then click "**OK**" button.
9. Choose your monitor model and click the "**Next**" button then click "**Next**" button.
10. Click the "**Finish**" button then the "**Close**" button.

If you can see the "**Digital Signature Not Found**" window then click the "**Yes**"button.
And click the "**Finish**" button then the "**Close**" button.

Microsoft® Windows® Millennium Operating System

1. Click "**Start**" , "**Setting**" , "**Control Panel**".
2. Double click "**Display**" icon.
3. Select the "**Settings**" tab and click "**Advanced Properties**" button.
4. Select the "**Monitor**" tab.
5. Click the "**Change**" button in the "**Monitor Type**" area.
6. Choose "**Specify the location of the driver**".
7. Choose "**Display a list of all the driver in a specific location..**" then click "**Next**" button.
8. Click the "**Have Disk**" button
9. Specify A:\(D:\driver) then click "**OK**" button.
10. Select "**Show all devices**" and choose the monitor that corresponds to the one you connected to your computer and click "**OK**".
11. Continue choosing "**Close**" button and "**OK**" button until you close the Display Properties dialogue box.

Microsoft® Windows® NT Operating System

1. Click **Start**, **Settings**, **Control Panel**, and then double-click **Display** icon.
2. In Display Registration Information window, click Settings Tab and then click **All Display Modes**.
3. Select a mode that you wish to use (Resolution, Number of colors and Vertical frequency) and then click **OK**.
4. Click **Apply** button if you see the screen working normally after clicking **Test**. If the screen is not normal, change to a different mode (lower mode of resolution, colors or frequency).

If there is no Mode at **All Display Modes**, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press Enter at the first and the second screen after executing the X86Config file.
2. The third screen is for **setting your mouse**.
3. Set a mouse for your computer.
4. The next screen is for **selecting a keyboard**.
5. Set a Keyboard for your computer.
6. The next screen is for **setting your monitor**.
7. First of all, set a **horizontal frequency** for your monitor. (You can enter the frequency directly.)
8. Set a **vertical frequency** for your monitor. (You can enter the frequency directly.)
9. Enter the **model name of your monitor**. This information will not affect the actual execution of X-Window.
10. You have **finished** setting up your monitor.
    Execute X-Window after setting other requested hardware.

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Natural Color

Natural Color

One of the recent problems in using a computer is that the color of the images printed out by a printer or other images scanned by a scanner or a digital camera are not the same as those shown on the monitor.
The Natural Color S/W is the very solution for this problem. It is a color administration system developed by Samsung Electronics in association with Korea Electronics & Telecommunications Research Institute (ETRI).
This system is available only for Samsung monitors and makes the color of the images on the monitor the same as the printed or scanned images.
For more information, refer to Help (F1) in the software program.

How to install the Natural Color software
Insert the CD included with the Samsung monitor into the CD-ROM Drive. Then, the initial screen of the program Natural Color will be executed. Click Natural Color on the initial screen to install the Natural Color software.
To install the program manually, insert the CD included with the Samsung monitor into the CD-ROM Drive, click the **[Start]** button of Windows and then select **[Run...]**.
Enter D:\color\NCProsetup.exe and then press the <Enter> key.
(If the drive where the CD is inserted is not D:\, enter the applicable drive.)

How to delete the Natural Color software program
Select **"Setting/Control Panel"** on the **"Start"** menu and then double-click **"Add/Delete a program"**.
Select Natural Color from the list and then click the **"Add/Delete"** button.

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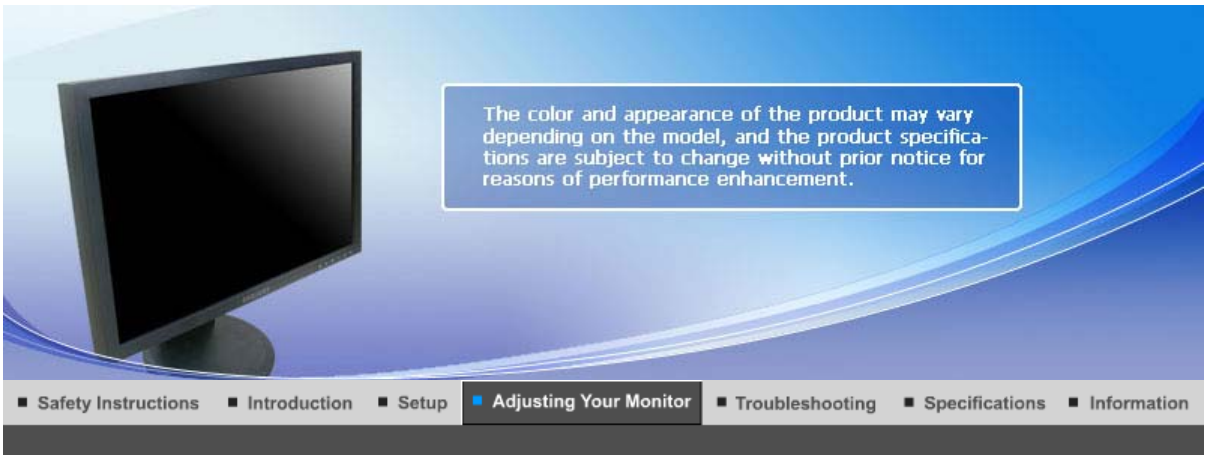
The color and appearance of the product may vary depending on the model, and the product specifications are subject to change without prior notice for reasons of performance enhancement.
Safety Instructions
Introduction
Setup
Adjusting Your Monitor
Troubleshooting
Specifications
Information

1. [MENU]Use this button to open the on-screen menu and exit from the menu screen or close screen adjustment menu.
2. [▼/▲]This button allows you to adjust items in the menu.
3. [⏎]Press this button to activate a highlighted menu item.
4. [**AUTO**]Press to self-adjust to the incoming PC signal. The values of fine,coarse and position are adjusted automatically.

AUTO

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Menu	Description
AUTO	When the '**AUTO**' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center. Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically. (Available in analog mode only) To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on. - If auto adjustment does not work properly, press AUTO button again to adjust picture with more accuracy. - If you change resolution in the control panel, auto function will be executed automatically.

Locked

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Menu	Description
Locked	After pushing the "MENU" button more than 5 seconds, OSD function is locked (unlocked). You can adjust only the brightness and contrast of the monitor with the OSD adjustment locking feature.

MagicBright™

Menu	Description
MagicBright™	Push the MagicBright button to circle through available preconfigured modes. - Six different modes (Custom/Text/Internet/Game/Sport/Movie)

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Brightness

Menu	Description
Brightness	When OSD is not on the screen, push the button to adjust brightness.

SOURCE

Menu	Description
SOURCE	Selects the video signal while the OSD is off.

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Picture	Brightness	Contrast			
Color	MagicColor	Color Tone	Color Control	Gamma	
Image	Coarse	Fine	Sharpness	H-Position	V-Position
OSD	Language	H-Position	V-Position	Transparency	Display Time
Setup	Auto Source	Image Reset	Color Reset	RTA	
Information					

Picture

Menu	Description	Play/Stop
Brightness	You can use the on-screen menus to change the brightness according to personal preference. **Direct Access Feature** : When OSD is not on the screen, push the button to adjust brightness. [MENU → ↵ → ↵ → ▲, ▼ → MENU]	
Contrast	You can use the on-screen menus to change the contrast according to personal preference. [MENU → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	

UP

Color

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Menu	Description	Play/Stop
MagicColor	MagicColor is a new technology that Samsung has exclusively developed to improve digital image and to display natural color more clearly without disturbing image quality. **1) Off** - Returns to the original mode. **2) Demo** - The screen before applying MagicColor appears on the right and the screen after applying MagicColor appears on the left. **3) Full** - Displays not only vivid natural color but also more realistic natural skin color with clearness. **4) Intelligent** - Displays vivid natural color with clearness. **5) MagicZone** - The MagicZone ensures the clear and sharp display of animated multimedia or photo images by enhancing the brightness, sharpness, saturation, hue of a certain area on the screen. Especially, MagicZone is appropriate to using the moving picture. Hue : This function is to adjust the hue of the MagicZone. Saturation : This function is to adjust the saturation of the MagicZone. Brightness : This function is to adjust the brightness of the MagicZone. Sharpness : This function is to adjust the sharpness of the MagicZone. H-Position : This function is to move the MagicZone horizontally. V-Position : This function is to move the MagicZone vertically. H-Size : This function is to adjust the horizontal size of the MagicZone. V-Size	

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	: This function is to adjust the vertical size of the MagicZone.
Color Tone	The tone of the color can be changed and one of four modes can be selected - Cool, Normal, Warm and Custom. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]
Color Control	Adjusts individual R,G,B color balance. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]
Gamma	Gamma correction changes the luminance of the colors with intermediate luminance. • Mode 1 • Mode 2 • Mode 3 [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]

UP

Image

Menu	Description	Play/Stop
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu. (Available in analog mode only) [MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU]	
Fine	Removes noise such as horizontal stripes. If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed). (Available in analog mode only) [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	

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Sharpness	Changes the clearance of image. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
H-Position	Changes the horizontal position of the monitor's entire display. (Available in analog mode only) [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
V-Position	Changes the vertical position of the monitor's entire display. (Available in analog mode only) [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	

UP

OSD

Menu	Description	Play/Stop
Language	You can choose one of 9 languages. • English, Deutsch, Español, Français, Italiano, Svenska, Русский , Português , Türkçe **Note**:The language chosen affects only the language of the OSD. It has no effect on any software running on the computer. [MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU]	
H-Position	You can change the horizontal position where the OSD menu appears on your monitor. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
V-Position	You can change the vertical position where the OSD menu appears on your monitor. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	

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Transparency	Change the transparency of the background of the OSD. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
Display Time	The menu will be automatically turned off if no adjustments are made for a certain time period. You can set the amount of time the menu will wait before it is turned off. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	

UP

Setup

Menu	Description	Play/Stop
Auto Source	Select **Auto Source** for the monitor to automatically select the signal source. [MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU]	
Image Reset	Image parameters are replaced with the factory default values. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
Color Reset	Color parameters are replaced with the factory default values. [MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]	
RTA	**RTA(Response Time Accelerator)** A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display. **RTA On** : Activates the RTA function so that the panel operates at a higher response speed than its original speed. **RTA Off** : Deactivates the RTA function so that the panel operates at its original response speed.	

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(**Note** : If you turn the power off and on again after switching RTA off, the RTA function is automatically switched On (Factory Setting))

[MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU]

Information

Menu	Description
Information	Shows a video source, display mode on the OSD screen. [MENU → ▲, ▼ → MENU]

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MagicTune™ HELP

Overview

What is MagicTune™ ?

Monitor performance can vary due to the graphics card, host computer lighting conditions and other environmental factors. In order to get the best image on a monitor requires you to adjust it for your unique setting. Unfortunately, the manual controls available to tune the image often prove to be challenging. Proper adjustment (tuning) requires an easy to use program that goes through a step-by-step process to obtain the best overall picture quality.

In most cases even simple adjustments to Brightness, or Contrast require navigation of the multi-level, on-screen display (OSD) menus that are not easy to understand. Furthermore, there is no feedback to assist in correctly setting the controls of the monitor. MagicTune™ is a software utility that guides you through the tuning process with easy to understand instructions and back ground patterns designed for each monitor control. The display settings for each user can be saved, providing an easy way to select display characteristics in a multi-user environment or having a single user have multiple defined presets based on content and ambient lighting.

Basic Functionality

MagicTune™ is a software utility that allows monitor adjustment and color tuning using the Display Data Channel Command Interface (DDC/CI) protocol. All adjustments to the display are controlled via software to eliminate the need to use the monitor on-screen display (OSD).
MagicTune™ supports Windows™ 2000, XP Home, and XP Professional.
It is recommended using MagicTune™ in Windows™ 2000 or later.

MagicTune™ allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

OSD Mode

The OSD mode allows easy adjustment of monitor settings without taking pre-defined steps. You can access the desired menu item to set with ease.

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.

Specifications subject to change without notice.
MagicTune™ is a trademark of SAMSUNG ELECTRONICS CO., Inc.
Windows™ is a registered trademark of Microsoft Corp.
Other trademarks are property of their respective holders.

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Installation

1. Insert the installation CD into the CD-ROM drive.
2. Click the MagicTune™ installation file.
3. Select installation Language, Click "Next".
4. When the Installation Shield Wizard window appears, click "Next."
5. Select "I agree to the terms of the license agreement" to accept the terms of use.
6. Choose a folder to install the MagicTune™ program.
7. Click "Install."
8. The "Installation Status" window appears.
9. Click "Finish."
10. When the installation is complete, the MagicTune™ executable icon appears on your desktop.

    Double-click the icon to start the program.

MagicTune™ execution icon may not appear depending on specification of computer system or monitor. If that happens, press F5 Key.

Installation Problems

The installation of MagicTune™ can be affected by such factors as the video card, motherboard and the network environment.
See "Troubleshooting" if you have trouble during installation.

System Requirements

OS

- Windows™ 2000
- Windows™ XP Home Edition
- Windows™ XP Professional

It is recommended using MagicTune™ in Windows™ 2000 or later.

Hardware

- 32 MB Memory above
- 60 MB Hard disk space above

* For more information, visit the MagicTune™ website.

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MagicTune™ HELP

MagicTune™ allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

- **OSD mode may appear inconsistent with the explanation in guidance book depending on specification of each monitor.**
- **When Pivot is functioning, part of MagicTune™ Program may not operate normally.**
- **AutoRotation : AutoRotation will automatically pivots the monitor to 0, 90, 180 degrees when you pivots the monitor.**

To execute Rotation, it should be done as below.
- **Please install both MagicRotation and MagicTune™ programs in your computer.**
- **Launch MagicTune™**
- **Option → Preference → Click the small box in the enable task tray menu.**

- **MagicTune™ control mode will be different according to monitor models.**
- **The permitted angle of rotation of the monitor is determined by the model of the monitor.**

OSD Mode

The OSD mode makes the adjustment of settings on all monitors easy. When selected , each tab on top of the control window displays the general descriptions of the sub-menu items for adjustment.
When selected, each tab displays a list of menus. For quick adjustment of the monitor settings, the OSD mode allows easy and convenient access to all tabs and sub-menu items.

Button Tab Definition

OK	Applies any changes made and exits MagicTune™ .
Reset	Restores the display settings to the factory settings.

Picture Tab Definition

Allows the user to adjust the screen settings to the desired values.

Brightness	Makes the entire screen brighter or darker. The detailed data of the images in the dark areas can be lost if the brightness is not adjusted to the proper level. Adjust the brightness for best viewing conditions.
	Adjusts the difference in brightness between the bright and dark areas on screen.

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Contrast	Determines the crispness of the images.
Resolution	Lists all display resolutions supported by the program.
MagicBright™	MagicBright™ is a new feature providing the optimum viewing environment depending on the contents of the image you are watching. 1. Text: For documentations or works involving heavy text. 2. Internet: For working with a mixture of images such as text and graphics. 3. Game : For watching motion pictures such as a Game. 4. Sport : For watching motion pictures such as a Sport. 5. Movie: For watching motion pictures such as a DVD or Video CD. 6. Dynamic Contrast : Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast. 7. Custom: Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Brightness and Contrast by using the OSD menu. MagicBright control mode will be different according to monitor models. Some monitor will only support Four modes(Text, Internet, Entertain, Custom)

Color Tab Definition

Adjusts the "warmth" of the monitor background or image color.

MagicColor and Gamma will be shown only in the monitor that supports these functions.

ColorTone	The tone of the color can be changed. ● Warm2 - Warm1 - Cool 1 - Cool 2 - Cool 3 - Cool 4 - Cool 5 - Cool 6 - Cool 7 ● Off ColorTone mode will be different according to monitor models. Some monitor will only support Four modes(Warm, Normal, Cool, Custom)
Color Control	Adjusts of the monitor image color. You can change the monitor color to your desired color. ● R- G - B
Calibration	The process through which the colors of your choice are optimized and maintained. You will find MagicTune™ extremely useful if you are one of those who wish to view images with their full details accurately reproduced - including web images and ones produced by a digital camera or scanner.
	MagicColor is a new technology that Samsung has exclusively developed to improve digital image and to display natural color more clearly without disturbing image quality. 1. OFF : Returns to the original mode. 2. DEMO : The screen before applying MagicColor appears on the right and the screen after applying MagicColor appears on the left. 3. Full : Displays not only vivid natural color but also more realistic natural skin color

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with clearness.

4. Intelligent : Displays vivid natural color with clearness.
5. MagicZone
   - The MagicZone ensures the clear and sharp display of animated multimedia or photo images by enhancing the brightness, sharpness, saturation, Hue of a certain area on the screen. This offers an easy-to-use interface that highlights the video-playing portion of your multimedia program by automatically detecting and highlight the desired area by dragging.
   - When the mouse cursor is activated( )and it is necessary to de-activate it to use it for other tasks, right click your mouse, or put the activated cursor ( )on the taskbar and click. When de-activated, the icon on the screen changes back to the one shown before activation.
   - Especially, MagicZone is appropriate to using the moving picture.
   - **Auto Detect** : If you run the Movie in some players, MagicZone will automatically get the play screen highlighted (it will be supported in players of Gom, Adrenalin, KCP, Window Media, and Power DVD etc.,)Some other players also can be highlighted but could have some problems.
   - Tusk menu

MagicColor

HUE	Adjust the tint of the color.
Saturation	Adjusts the color saturation.
Brightness	Adjusts the Brightness.
Sharpness	Adjusts the difference between the lightest and darkest areas of the display.
Zone Off	Turn off the zone that you have captured.
Reset	Returns to the the default setting that vendor has set.

- Depending on the monitor models **Color Control, Sharpness, Contrast, ColorTone** will not be adjustable in MagicColor mode of **Full and Intelligent.**

- MagicTune™ will be disappear if you excute MagicZone, and closing the MagicZone after adjusting, will show the MagicTune™ again. (System Tray is Unhecked)
  MagicTune™ will be disappear if you excute MagicZone, and closing the MagicZone after adjusting. will not show MagicTune™ again. (System Tray is Checked)
- MagicColor mode will be different according to monitor models. MagicZone mode will show if the monitor supports the function.

Color Innovation

Color Innovation function provides optimized color for personal favor to view effectively with WCG-CCFL which was applied to Samsung Electronics for the first time.

- Brilliant : If you select "Brilliant", you can view a more clear and vibrant image.
- Mild : If you select "Mild", you can view a more natural and soft image.
- Custom : The pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Picture and Color menu by using the OSD to fit your eyes.

Gamma

Gamma correction changes the luminance of the colors with intermediate luminance.

Gamma mode will be different according to monitor models. Some monitor will only support Three modes.(Mode1, Mode2, Mode3)

6-Color

This refers to the process that optimizes the color according to the user's needs and maintains the optimized color. MagicTune™ will be helpful for users wishing to view images including web images, as well as pictures taken by a digital camera or scanner through Windows.

- Saturation - To adjust the chroma.
- Hue - To adjust the color tone.
- Reset - To reset the monitor settings to the factory defaults.

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Image Tab Definition

Adjusts the Fine , Coarse and Position values.

Image Setup	• Fine : Removes noise such as horizontal stripes. If the noise persists even after Fine tuning, repeat it after adjusting the frequency (clock speed). • Coarse : Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the Horizontal Control menu. • Auto Setup : Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically.
Position	Adjusts the screen location horizontally and vertically.
Sharpness	Changes the clearance of image.

Option Tab Definition

You can configure MagicTune™ using the following options.

Preferences	Loads the Preferences Dialog Box. Preferences in use will have an "V" in the check box. To turn on or off any Preference, position the cursor over the box and click. • Transparency • Enable task tray menu . - To access the MagicTune™ menus, click the icon on the [task tray menu]. The menus are not displayed if the [Enable System Tray] is deselected in [Options] ' [Basic Settings].
Source Select	• Analog • Digital
Color Weakness	This refers to the process that optimizes the color and maintains the optimized color. • Off - To cancel Partial Color Blindness Mode. • Custom - Partial Color Blindness Test • Reset - To reset the monitor settings to the factory defaults.
PIP	When external A/V devices such as VCRs or DVDs are connected to the monitor, PIP allows you to watch video from those devices in a small window super-imposed on the PC Video signal. (Off / On)
	PIP — Turn the PIP Screen on or off.
	Source — Select the input source for the PIP.
	Size — Change the Size of the PIP window.
	Position — Change the Position of the PIP window.

Applied only in specific monitors.
Changing languages in MagicTune™ will be applied to monitor OSD(On Screen Display) languages.OSD language will be changed to current language settings of MagicTune™ .

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Customized Key	**MagicBright**	Set Customized Key to MagicBright.
	MagicColor	Set Customized Key to MagicColor.
	Auto Setup	Set Customized Key to Auto Setup.
	Source Select	Set Customized Key to Source Select
	ColorTone	Set Customized Key to ColorTone

Support Tab Definition

Shows the Asset ID and the version number of the program, and allows you to use the Help feature.

Help	Visit the MagicTune™ website or click to open the Help files (User Manual) if you need any help installing or running MagicTune™ . The User Manual opens within a basic browser window.	
Asset ID	you can use the server to control the Client monitor. (Server program should be installed to use this program as Client) **When selecting the Customize checkbox at the bottom you can enter your personal information.**	
	User Name	Shows the user name that is registered in PC.
	User ID	Shows the user ID that is register in PC.
	Server IP	Write down the server IP .
	Department	Write down the department.
	Location	Write down the location.
Version	Displays the version of MagicTune™ .	

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.

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Color Calibration

1. Color Calibration

Color Calibration guides you to get optimal color condition for your monitor.

Proceed following 5steps for getting optimal monitor color condition .

1. Control "Brightness control bar" for matching the brightness of control patch and the brightness of background pattern
2. When you detect specific color tone on "Control patch", move the control cursor toward to the direction of the color tone referring to "Color reference Circle".
   => Adjustment is finished properly, you won't detect any color tone on Control patch.
3. When you finish adjustment for step1,Click "Next" button .
4. Repeat 1), 2), 3) procedures for remaining step2 ~ step5.
5. You can easily view the calibration effect through clicking "Preview " button!

How multiple users can use adjusted color values
Definition
When monitor is used by multiple users, color values which are adjusted via Color calibration for each users can be saved and used. Up to 5 users can use the saved color values.

1. How to save adjusted color values:
   Press Next to make it change into Apply and then you can save adjusted color values.
   As many as 5 values can be saved.
2. How to apply the saved color values:
   Press Multi User button on main screen to select and use one of the saved color values.

2. Preview

Press "Preview" button on the Color Calibration.
The above picture will be shown.

1. Press "View Calibrated" button to see the calibration effect which you adjusted.
2. Press "View Uncalibrated" button to see the original image.

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.

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Uninstall

The MagicTune™ program can be removed only by using the "Add or Remove Programs" option of the Windows™ Control Panel.

Perform the following steps remove MagicTune™ .

1. Go to [Task Tray] ' [Start] ' [Settings] and select [Control Panel] in the menu. If the program runs on Windows™ XP, go to [Control Panel] in the [Start] menu.
2. Click the "Add or Remove Programs" icon in Control Panel.
3. In the "Add or Remove Programs" screen, scroll down to find "MagicTune™ ." Click on it to highlight it.
4. Click the "Change/Remove" button to remove the program.
5. Click "Yes" to begin the uninstall process.
6. Wait until the "Uninstall Complete" dialog box appears.

Visit the MagicTune™ website for technical support for MagicTune™ , FAQs (questions and answers) and software upgrades.

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.

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MagicTune™ HELP

Troubleshooting

The current computing system is not compatible with MagicTune™ .

Please press OK and click on the "Shortcut to the MagicTune™ site" to view our home page for further reference.

An error may occur when your video/graphic card is not in the 'Available' list.
(The latest or oldest video cards may not be compatible.)

Please visit our homepage to see the Troubleshooting section.

An error may occur if the card maker has modified the video card driver or the graphics chip even when the video card is in the list.

Please visit our homepage to see the Troubleshooting section.

Check if your monitor is manufactured by Samsung.
Products from other manufacturers may cause errors.

Only Samsung products are able to support this feature.

An error may occur even when your monitor is manufactured by Samsung but is out of date.
Check if your monitor is able to support MagicTune™ .

This feature is only supported by those monitors that are registered on our homepage. Check for the monitor before purchasing it as out-of-date models are not supported.

An error occurs when no information on EDID (Extended Display Identification Data) exists for the current monitor.
This happens when from your desktop, Start > Setup > Control Panel > System > Hardware > Device Manager > Monitor is selected, the current "Plug-and-play monitor" is removed and new hardware is searched for but the system couldn't find any "Plug-and-play monitor".

Please visit our homepage to see the Troubleshooting section.

An error occurs when replacing the monitor with a new one when the system power is off but the system has not been restarted.

Please restart the system each time the monitor is replaced before using MagicTune™ .

An error occurs when the video card driver is not installed properly.
This happens when the current video card list is not displayed normally. You can

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check this via Start > Setup > System > Hardware > Device Manager > Display Adapter.

Visit the video card maker's homepage and download and install the latest driver.
For more information about the video card, contact the card manufacturer.

To ensure normal operation, please restart your system.

An error occurs when the system is not restarted after installing MagicTune™ .
(This is for Win98SE and WinMe only.)

Restart the system before use.

For the best performance of MagicTune™ , adjust to the optimal resolution. Refer to the User Guide for the optimal resolution.

If you do not adjust to the optimal resolution and perform Color Calibration, the monitor cannot be adjusted to the optimal condition.

Refer to the manual for the optimal resolution.

This video card does not support MagicTune™ .
Please install a new video card driver.

An error occurs when the video card driver is not installed properly.
This happens when the current video card list is not displayed normally. You can check this from Start > Setup > System > Hardware > Device Manager > Display Adapter.

Visit the video card manufacturer's homepage and download and install the latest driver.
For more information about the video card, contact the card manufacturer.

As the Highlight program uses the communication lines,
please exit the Highlight program before you can access MagicTune™ .

Some of Samsung CDT monitors support the Highlight feature.
When using both the Highlight feature and MagicTune™ simultaneously, conflicts occur, which cause errors.

Make sure to turn OFF Highlight before using MagicTune™ .

Troubleshooting

- MagicTune™ may not work in case monitor is replaced or driver of graphic card is updated while MagicTune™ is operating. If so, please restart the system.

Symptom	Check List	Solutions
Check when MagicTune™ does not function properly.	MagicTune™ feature is found only on PC (VGA) with Window OS that supports Plug and Play.	* To check whether your PC is available for MagicTune™ feature, follow the steps below (When Windows™ is XP); Control Panel -> Performance and Maintenance -> System -> Hardware -> Device Manager ->

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		Monitors -> After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware.
		MagicTune™ is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided. http://www.samsung.com/monitor/magictune
MagicTune™ doesn't work properly.	Have you changed your PC or video graphic card?	Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune.
	Did you install the program?	Reboot the computer after installing the program for the first time. If a copy of the program is already installed, remove it, reboot the computer, and then install the program again. You need to reboot the computer for it to operate normally after installing or removing the program.

- Visit the MagicTune™ website for technical support for MagicTune™ , FAQs (questions and answers) and software upgrades.
- Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.

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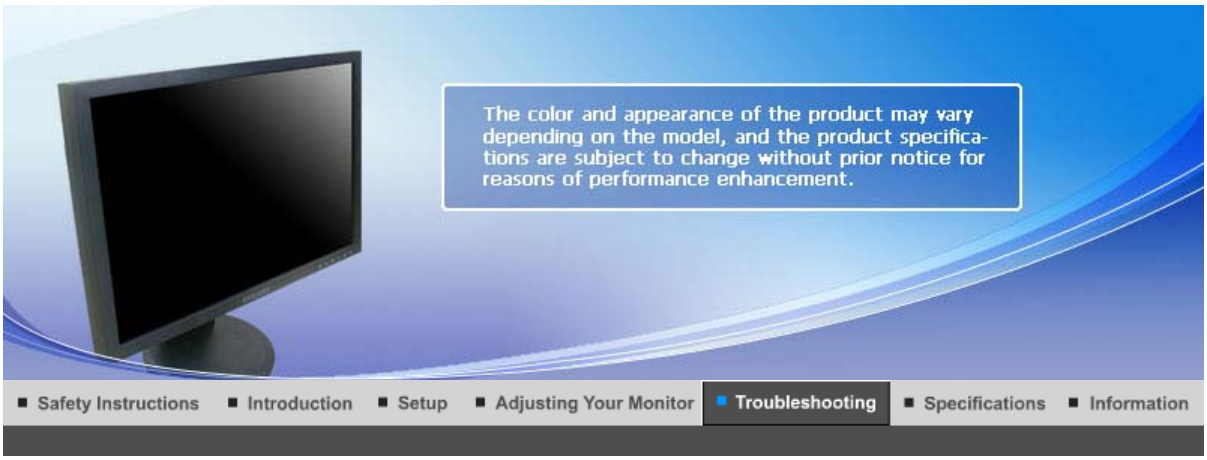
The color and appearance of the product may vary depending on the model, and the product specifications are subject to change without prior notice for reasons of performance enhancement.
Safety Instructions
Introduction
Setup
Adjusting Your Monitor
Troubleshooting
Specifications
Information

Check List

Before calling for assistance, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

Symptom	Check List	Solutions
No images on the screen. I cannot turn on the monitor.	Is the power cord connected properly?	Check the power cord connection and supply.
	Can you see **"Check Signal Cable"** on the screen?	Check the signal cable connection.
	If the power is on, reboot the computer to see the initial screen(the login screen), which can be seen.	If the initial screen (the login screen) appears, boot the computer in the applicable mode (the safe mode for Windows ME/XP/2000) and then change the frequency of the video card. (Refer to the Preset Timing Modes) Note: If the initial screen (the login screen) does not appear, contact the Service Center or your dealer.
	Can you see **"Not Optimum Mode","Recommended mode 1440 x 900 60 Hz"** on the screen?	You can see this message when the signal from the video card exceeds the maximum resolution and frequency that the monitor can handle properly. Adjust the maximum resolution and frequency that the monitor can handle properly. If the display exceeds SXGA or 75 Hz, a **"Not Optimum Mode","Recommended mode 1440 x 900 60 Hz"** message is displayed. If the display exceeds 85 Hz, the display will work properly but the **"Not Optimum Mode","Recommended Mode 1440 x 900 60 Hz"** message appears for one minute and then

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		disappears. Please change to the recommended mode during this one-minute period. (The message is displayed again if the system is rebooted.)
	There is no image on the screen. Is the power indicator on the monitor blinking at 1 second intervals?	The monitor is in PowerSaver mode. press a key on the keyboard to activate the monitor and restore the image on the screen. If there is still no image, press the '⏎' button. Then press any key on the keyboard again to activate the monitor and restore the image on the screen.
I cannot see the On Screen Display.	Have you locked the On Screen Display (OSD) Menu to prevent changes?	Unlock the OSD by pressing the [MENU / ⊞] button for at least 5 seconds.
The screen shows strange colors or just black and white.	Is the screen displaying only one color as if looking at the screen through a cellophane paper?	Check the signal cable connection.Make sure the video card is fully inserted in it's slot.
	Have the screen colors become strange after running a program or due to a crash between applications?	Reboot the computer.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
The screen suddenly has become unbalanced.	Have you changed the video card or the driver?	Adjust screen image position and size using the OSD.
	Have you adjusted the resolution or frequency to the monitor?	Adjust the resolution and frequency at the video card. (Refer to the Preset Timing Modes).
	The screen can be unbalanced due to the cycle of the video card signals. Readjust Position by referring to the OSD.	
The screen is out of focus or OSD cannot be adjusted.	Have you adjusted the resolution or frequency on the monitor?	Adjust the resolution and frequency of the video card. (Refer to the Preset Timing Modes).
LED is blinking but no images on the screen.	Is the frequency properly adjusted when checking the Display Timing on the menu?	Adjust the frequency properly by referring to the video card manual and the Preset Timing Modes. (The maximum frequency per resolution may differ from product to product.)
There are only 16 colors shown on the screen. The screen colors have changed after changing the video card.	Have the Windows colors been set properly?	Windows ME/2000/XP: Set the colors properly at the **Control Panel → Display → Settings**.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
There is a message that reads "Unrecognized monitor, Plug & Play (VESA DDC) monitor found".	Have you installed the monitor driver?	Install the monitor driver according to the Driver Installation Instructions.
	See the video card manual to see if the Plug & Play (VESA DDC) function can be supported.	Install the monitor driver according to the Driver Installation Instructions.

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Check when MagicTune™ does not function properly.	MagicTune™ feature is found only on PC (VGA) with Window OS that supports Plug and Play.	* To check whether your PC is available for MagicTune™ feature, follow the steps below (When Windows is XP); Control Panel -> Performance and Maintenance -> System -> Hardware -> Device Manager -> Monitors -> After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware. MagicTune™ is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided. http://www.samsung.com/monitor/magictune
MagicTune™ doesn't work properly.	Have you changed your PC or video graphic card?	Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune.
	Did you install the program?	Reboot the computer after installing the program for the first time. If a copy of the program is already installed, remove it, reboot the computer, and then install the program again. You need to reboot the computer for it to operate normally after installing or removing the program.

Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.

Check the following items if there is trouble with the monitor.

1. Check if the power cord and the video cables are properly connected to the computer.
2. Check if the computer beeps more than 3 times when booting.
   (If it does, request an a service for the main board of the computer.)
3. If you installed a new video card or if you assembled the PC, check if the installed the adapter (video) driver and the monitor driver.
4. Check if the scanning ratio of the video screen is set at 56 Hz ~ 75 Hz.
   (Do not exceed 75 Hz when using the maximum resolution.)
5. If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter at the "**Control Panel→System→Device Administrator**" and then reboot the computer to reinstall the adapter (video) driver.

If problems repeatedly occur, contact an authorized service center.

Q & A

Question	Answer
How can I change the frequency?	The frequency can be changed by reconfiguring the video card. Note that video card support can vary, depending on the version of the driver used. (Refer to the computer or the video card

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	manual for details.)
How can I adjust the resolution?	Windows ME/XP/2000 : Set the resolution at the Control Panel→Display→Settings. * Contact the video card manufacturer for details.
How can I set the Power Saving function?	Windows ME/XP/2000 : Set the function at BIOS-SETUP of the computer or the screen saver. (Refer to Windows/Computer Manual).
How can I clean the outer case/LCD Panel?	Disconnect the power cord and then clean the monitor with a soft cloth, using either a cleaning solution or plain water. Do not leave any detergent or scratches on the case. Do not let any water enter the monitor.

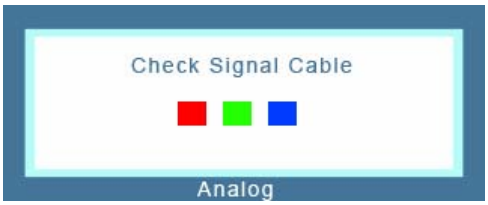
Self-Test Feature Check

Self-Test Feature Check | Warning Messages | Environment | Useful Tips

Your monitor provides a self test feature that allows you to check whether your monitor is functioning properly.

Self-Test Feature Check

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.
   If the monitor is functioning properly, you will see a box in the illustration below.

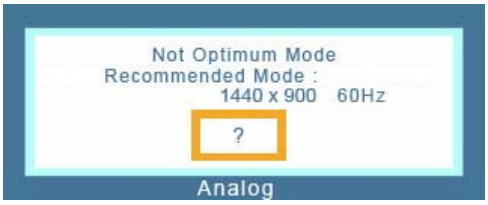


   This box appears during normal operation if the video cable becomes disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.
   If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; your monitor is functioning properly.

Warning Messages

If there is something wrong with the input signal, a message appears on the screen or the screen goes blank although the power indicator LED is still on. The message may indicate that the monitor is out of scan range or that you need to check the signal cable.



Environment

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The location and the position of the monitor may influence the quality and other features of the monitor.

1. if there are any sub woofer speakers near the monitor, unplug and relocate the woofer to another room.
2. Remove all electronic devices such as radios, fans, clocks and telephones that are within 3 feet (one meter) of the monitor.

Useful Tips

- A monitor recreates visual signals received from the computer. Therefore, if there is trouble with the computer or the video card, this can cause the monitor to become blank, have poor coloring, noise, Video mode not supported, etc. In this case, first check the source of the problem, and then contact the Service Center or your dealer.

- **Judging the monitor's working condition**
  If there is no image on the screen or a **"Not Optimum Mode","Recommended Mode 1440 x 900 60 Hz"** message comes up, disconnect the cable from the computer while the monitor is still powered on.
  - If there is a message coming up on the screen or if the screen goes white, this means the monitor is in working condition.
  - In this case, check the computer for trouble.

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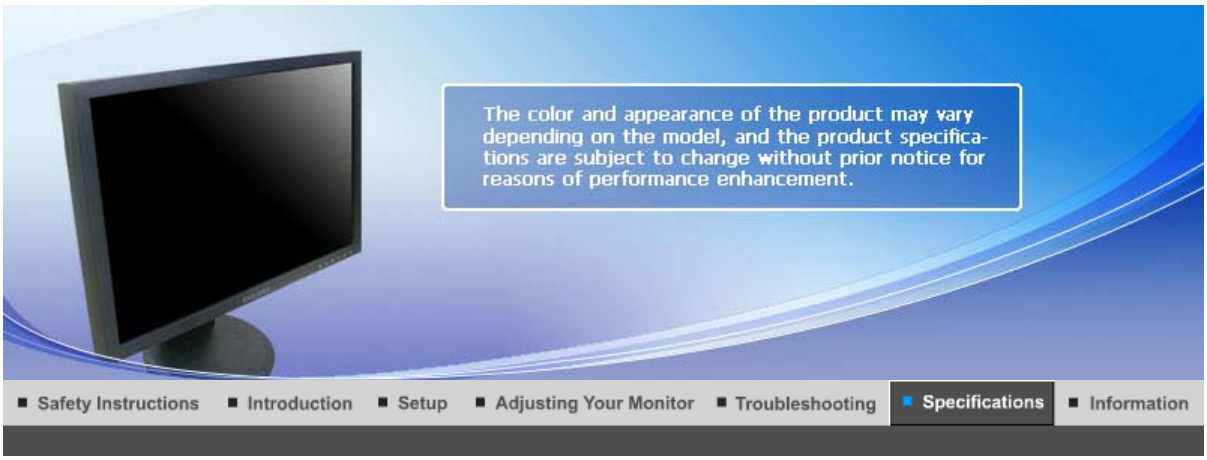
The color and appearance of the product may vary depending on the model, and the product specifications are subject to change without prior notice for reasons of performance enhancement.
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General

General	
Model Name	SyncMaster 940BW
LCD Panel	
Size	19 " Wide Diagonal (48 cm)
Display area	410.4 mm (H) x 256.5 mm (V)
Pixel Pitch	0.285 mm (H) x 0.285 mm (V)
Synchronization	
Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz
Display Color	
16.2 M Colors	
Resolution	
Optimum resolution	1440 x 900@60 Hz
Maximum resolution	1440 x 900@75 Hz
Input Signal, Terminated	
RGB Analog , DVI(Digital Visual Interface) Compliant Digital RGB 0.7Vp-p Positive at 75Ω ±10% Separate H/V sync, Composite sync, SOG, TTL level positive or negative.	
Maximum Pixel Clock	
137 MHz	
Power Supply	
AC 100 - 240V~ (+/- 10%), 50/60Hz	
Signal Cable	
15pin to 15pin D-sub cable, Detachable. DVI-D to DVI-D connector, Detachable. (option)	
Dimensions (WxDxH)/ Weight (Simple Stand)	
439 x 200 x 360.7 mm / 17.3 x 7.9 x 14.2 inch (with Basic Stand) / 4.7 kg	

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Dimensions (WxDxH)/ Weight (Sliding Stand)

439 x 200 x 327.3 mm / 17.3 x 7.9 x 12.9 inch (with Basic Stand) / 6.3 kg

VESA Mounting Interface

75 mm x 75 mm (for use with Specialty(Arm) Mounting hardware.)

Environmental considerations

Operating	Temperature: 50°F ~ 104°F (10°C ~ 40°C) Humidity: 10 % ~ 80 %, non-condensing
Storage	Temperature: -4 °F ~113 °F (-20°C ~ 45°C) Humidity: 5 % ~ 95 %, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. Interaction of the monitor and computer systems will provide the best operating conditions and monitor settings. In most cases, monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without uneasiness.

- For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.

Note: Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas.

(Class B equipment emits less electromagnetic waves than Class A equipment.)

PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode	Power off (Power button OFF) EPA/ENERGY 2000	Power off (Power S/W OFF)
Power Indicator	Blue	Blue, Blinking	Black	Black
Power Consumption	Less than 42 W	Less than 1 W (Off-mode)	Less than 1 W (120 Vac / 220 Vac)	Less than 0 W

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

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Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing Modes

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA,1280 x 960	60.000	60.000	108.000	+/+
VESA,1280 x 1024	63.891	60.020	108.000	+/+
VESA,1280 x 1024	79.976	75.025	135.00	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1440 x 900	70.635	74.984	136.750	-/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit: Hz

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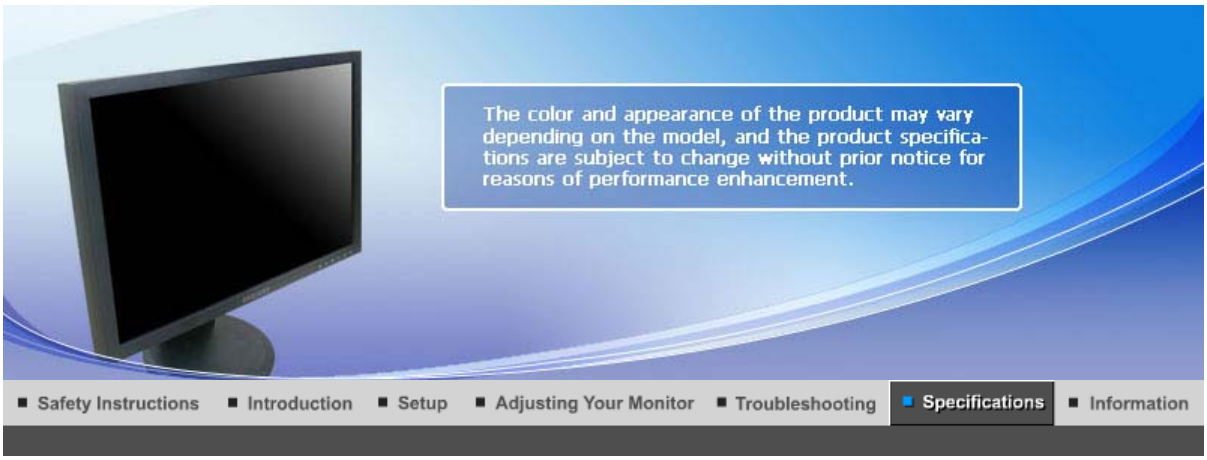
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General

General	
Model Name	SyncMaster 941BW
LCD Panel	
Size	19 " Wide Diagonal (48 cm)
Display area	410.4 mm (H) x 256.5 mm (V)
Pixel Pitch	0.285 mm (H) x 0.285 mm (V)
Synchronization	
Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz
Display Color	
16.2 M Colors	
Resolution	
Optimum resolution	1440 x 900@60 Hz
Maximum resolution	1440 x 900@75 Hz
Input Signal, Terminated	
RGB Analog , DVI(Digital Visual Interface) Compliant Digital RGB 0.7Vp-p Positive at 75Ω ±10% Separate H/V sync, Composite sync, SOG, TTL level positive or negative.	
Maximum Pixel Clock	
137 MHz	
Power Supply	
AC 100 - 240V~ (+/- 10%), 50/60Hz	
Signal Cable	
15pin to 15pin D-sub cable, Detachable. DVI-D to DVI-D connector, Detachable. (option)	
Dimensions (WxDxH)/ Weight (Simple Stand)	
439 x 200 x 360.7 mm / 17.3 x 7.9 x 14.2 inch (with Basic Stand) / 4.7 kg	

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Dimensions (WxDxH)/ Weight (Sliding Stand)

439 x 200 x 327.3 mm / 17.3 x 7.9 x 12.9 inch (with Basic Stand) / 6.3 kg

VESA Mounting Interface

75 mm x 75 mm (for use with Specialty(Arm) Mounting hardware.)

Environmental considerations

Operating	Temperature: 50°F ~ 104°F (10°C ~ 40°C) Humidity: 10 % ~ 80 %, non-condensing
Storage	Temperature: -4 °F ~113 °F (-20°C ~ 45°C) Humidity: 5 % ~ 95 %, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. Interaction of the monitor and computer systems will provide the best operating conditions and monitor settings. In most cases, monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without uneasiness.

- For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.

Note: Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas.

(Class B equipment emits less electromagnetic waves than Class A equipment.)

PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode	Power off (Power button OFF) EPA/ENERGY 2000	Power off (Power S/W OFF)
Power Indicator	Blue	Blue, Blinking	Black	Black
Power Consumption	Less than 42 W	Less than 1 W (Off-mode)	Less than 1 W (120 Vac / 220 Vac)	Less than 0 W

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

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Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing Modes

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA,1280 x 960	60.000	60.000	108.000	+/+
VESA,1280 x 1024	63.891	60.020	108.000	+/+
VESA,1280 x 1024	79.976	75.025	135.00	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1440 x 900	70.635	74.984	136.750	-/+

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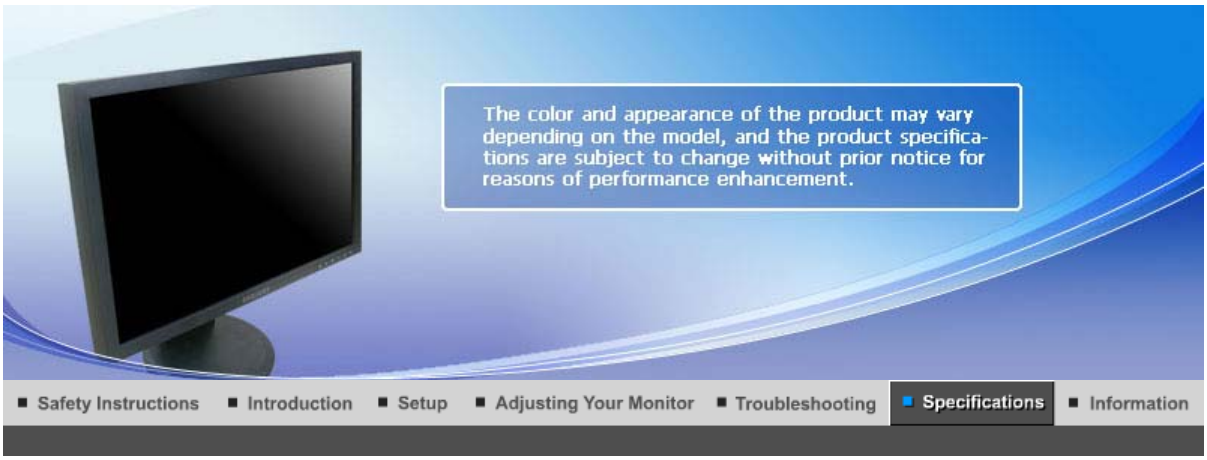
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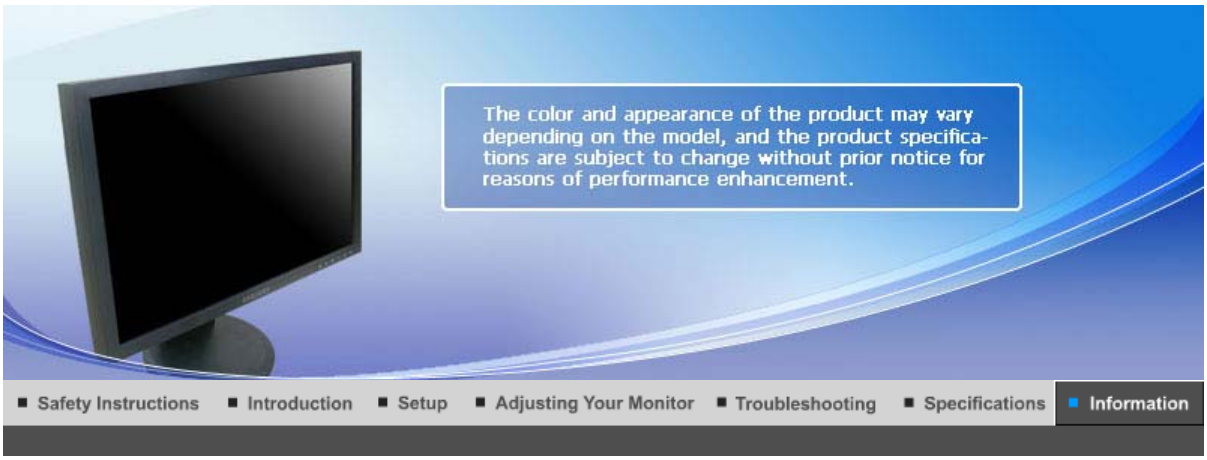
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Terms

- **Dot Pitch**
  The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

- **Vertical Frequency**
  The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit: Hz

  Example :If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

- **Horizontal Frequency**
  The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

- **Interlace and Non-Interlace Methods**
  Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

- **Plug & Play**
  This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

- **Resolution**
  The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

  Example :If the resolution is 1440 X 900 , this means the screen is composed of 1440 horizontal dots (horizontal resolution) and 900 vertical lines (vertical resolution).

For Better Display

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1. Adjust computer resolution and screen injection rate (refresh rate) oncomputer as described below to enjoy the best quality of picture. You can have an uneven quality of picture in the screen if the best quality of picture is not provided in TFT-LCD.
    - Resolution: 1440 X 900
    - Vertical frequency (refresh rate): 60 Hz
2. TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen.
   This is not from bad quality and you can use it without uneasiness.
    - For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.
3. When you clean the monitor and the panel outside, please apply the recommended small amount of cleaner by using soft and dry cloth and polish it. Let LCD area not to be forced but to be scrubbed out softly.
   If excessive force is applied, you can have a stain on it.
4. If you are not satisfied with the quality of the picture, you can get better quality of the picture by executing "auto adjustment function" in display screen that is appeared as window termination button is pressed.
   If there's still noise after automatic adjustment, use FINE/COARSE adjustment function.
5. If you view a fixed screen for an extended period of time, residual image or blurriness may appear.
   Change the mode to energy save or set a screensaver to move the picture when you need to be away from the monitor for an extended period of time.

Authority

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PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.
This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

- **Warranty**
  Warranty does not cover any damage caused by image retention.
  Burn-in is not covered by the warranty.

- **What is Image retention ?**
  During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD,are subject to image retention. This is not a product defect.

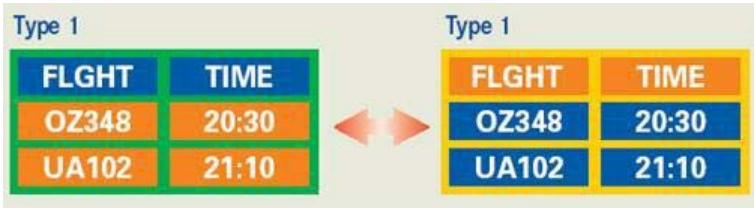
  Please follow the suggestions below to protect your LCD from image retention

- **Power Off, Screen Saver, or Power Save Mode**
  Ex)
  - Turn the power off when using a stationary pattern.
    - Turn the power off for 4 hours after 20 hours in use
    - Turn the power off for 2 hours after 12 hours in use
  - Use a Screen saver if possible
    - Screen saver in one color or a moving image is recommended.
  - Set the Monitor to power off with the PC Display Properties Power Scheme.

- **Suggestions for specific applications**
  Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems
  We recommend that you follow set up of your display system program as below:

- **Display Information together with Logo or Moving image cycle.**
  Ex) Cycle : Display Information for 1 hour followed by a
  Display Logo or moving image for 1 minute.

- **Change the Color Information periodically (Use 2 different colors).**
  Ex) Rotate the Color Information with 2 colors every 30 minutes.



Avoid using a combination of characters and background color with large difference in luminance.
Avoid using Grey colors, which can cause Image retention easily.

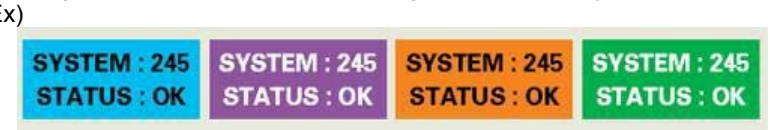
- Avoid: Colors with big difference in luminance (Black & White, Grey)

Ex)

- Recommended settings: Bright colors with little difference in luminance

- Change the characters color and background color every 30 minutes

Ex)



- Every 30 minutes, change the characters with movement.

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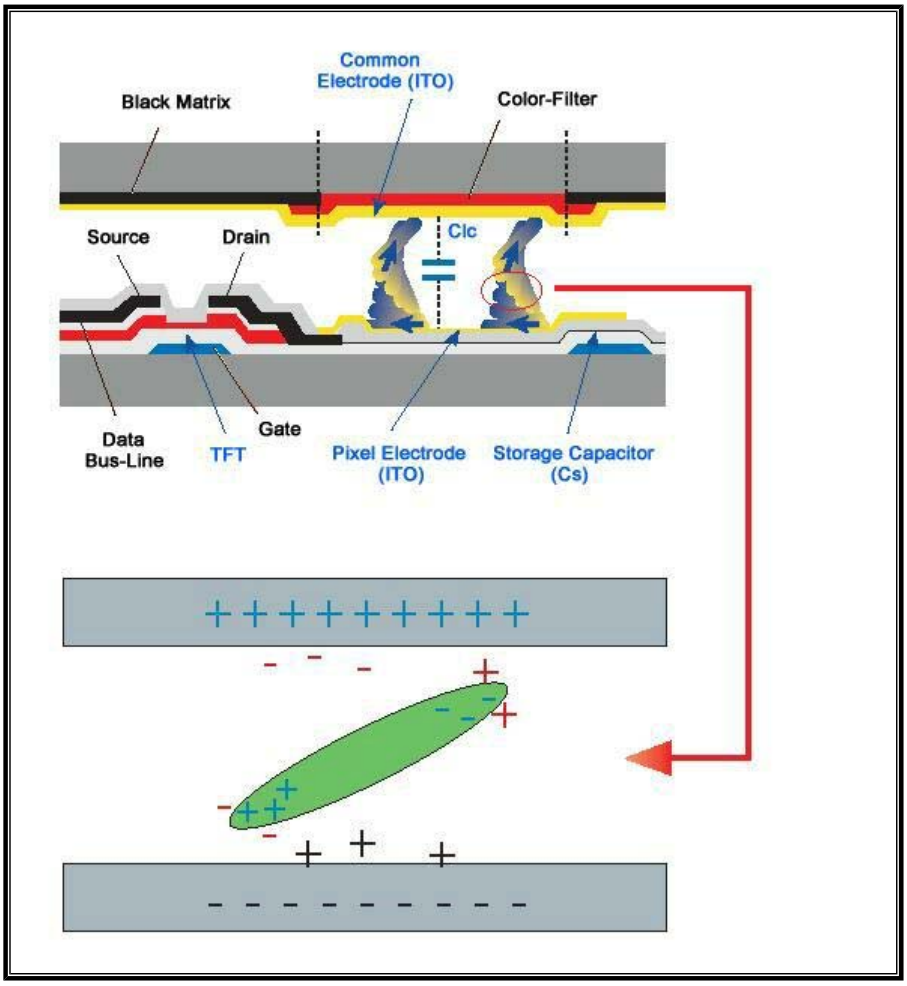
Ex)

- **The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.**

  Image retention may not occur when a LCD panel is operated under normal conditions.

  Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.
  To prevent this, the accumulated voltage difference must be decreased.



- Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II

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Correct Disposal of This Product
(Waste Electrical & Electronic Equipment) - Europe only

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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